عنوان مقاله:

Expanded Fraction Defective Chart using Cornish-Fisher Terms with Adjusted Control Limits to Improve In-control Performance

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خلاصه مقاله:

The number of nonconforming items in a sample is monitored using the fraction defective or np-chart. The performance of the np-chart in Phase II depends on the accuracy of estimated parameter in Phase I. Although taking large sample sizes ensure the accuracy of estimated parameter, it can be impractical for attributes in some cases. Recently, traditional c-chart and np-chart with some adjustments have been studied to guarantee the performance. Due to technology progresses, researchers have faced high quality processes with very low rate of nonconformities for which traditional control charts are inadequate. To improve such inaccuracy, this study develops a new np-chart based on simple adjustments derived from Cornish-Fisher expansions. Additionally, bootstrap method is applied to guarantee the desired conditional in-control average run length (ARL0). Through a simulation study, their performances are compared. The results show that the bootstrap method accurately estimates the thresholds.

کلمات کلیدی:

(np-chart,Adjusted limits, Cornish-Fisher expansions, Bootstrap, average run length (ARL

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